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10/553,856	10/19/2005	Soon-Jo Woo	4820-010	6559

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EXAMINER

NG, EUNICE

ART UNIT	PAPER NUMBER
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2626

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02/21/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/553,856

Applicant(s)

WOO, SOON-JO

Examiner

Eunice Ng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. In response to the Office Action mailed 6/25/07, Applicants have submitted an Amendment, filed 11/26/07, amending claims 1-5, adding new claims 6 and 7, without adding new matter, and arguing to traverse claim rejections.

Response to Arguments

2. Applicant's arguments with respect to claims 1-5 have been considered but are moot in view of the new ground(s) of rejection, below.

Drawings

3. The drawings were received on 11/26/07. These drawings are acceptable.

Claim Rejections - 35 USC § 112

4. Claims 1, 4 and 5 have been amended and these changes are acceptable. Thus, the rejection has been withdrawn.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "most important" in claim 2 is a relative term which renders the claim indefinite. The term "most important" is not defined by the claim, the specification does not

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provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

7. Claim 2 recites the limitation "the category" in line 11 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Objections

8. Claim 6 is objected to because of the following informalities: The phrase "one multiple morpheme" at line 4 of the claim is unclear. Appropriate correction is required.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Kugimiya et al. ("Kugimiya"), US Patent 5,088,039.

Regarding claim 1, Kugimiya teaches a syntax analysis method for analyzing syntax and describing the grammatical function of the syntax...the method comprising:

analyzing morphemes wherein if a sentence desired to be analyzed is input, the contents of morphemes are analyzed in units of polymorphemes according to the morpheme dictionary program, and after selecting an analysis case of a morpheme appropriate to the input data among morpheme analysis data by polymorpheme, preprocessing is performed; and analyzing syntax

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wherein with the analyzed morphemes, partial structures of a sentence are first established according to grammatical roles stored in the grammar rule database, and then, by using the subcategorization database, the entire structure is established and by calculating the weighted value of each structure, a most appropriate optimum case is determined and output (Abstract, Kugimiya teaches a dictionary look up and morpheme analyzer, syntax analyzer for analyzing a syntactic structure of the morpheme array provided by the look up and morpheme analyzer with dictionary and grammatical rules, a converter for converting the syntactic structure analyzed by the syntax analyzer into a corresponding syntactic structure and generator for generating a translation in accordance with the syntactic structure of the target language received from the converter referring to the information obtained by looking up the dictionary; Figure 1-3 illustrate the dictionary lookup, morpheme analysis, syntax analysis, meaning analysis, and context analysis steps).

Kugimiya also teaches performing preprocessing in which whether or not there is a sentence construction included in the multiple morpheme list is determined by a multiple morpheme list program, and if there is a multiple morpheme sentence construction, the multiple morpheme construction is transformed into a multiple morpheme form (Abstract, teaches translating a sentence including an adverb phrase [multiple morpheme]...using a translating apparatus which includes a dictionary look up and morpheme analyzer for looking up each word constituting an input sentence of a source language in a dictionary and providing a morpheme array of the input sentence; col. 4, ll. 58-62; Figs. 10-11); and determining and including the meaning of the morpheme in each morpheme by a semantic feature program (col. 3, ll. 11-26, teaches meaning generation and meaning analysis).

Regarding claim 7, Kugimiya teaches the semantic feature program refers to a semantic feature dictionary and tags a semantic feature to each morpheme obtained in the step of analyzing morphemes, thus determining a syntactic characteristic of the morpheme and a meaning information to reduce structural equivalency in a compound sentence structure (col. 3, ll. 30-37, teaches dictionary lookup and morpheme analysis...grammatical information, such as a parts of speech and corresponding equivalents are obtained for each word...tense, person, number and the like are analyzed; Abstract, Kugimiya teaches a dictionary look up and morpheme analyzer, syntax analyzer for analyzing a syntactic structure of the morpheme array provided by the look up and morpheme analyzer with dictionary and grammatical rules, a converter for converting the syntactic structure analyzed by the syntax analyzer into a corresponding syntactic structure and generator for generating a translation in accordance with the syntactic structure of the target language received from the converter referring to the information obtained by looking up the dictionary; Figure 1-3 illustrate the dictionary lookup, morpheme analysis, syntax analysis, meaning analysis, and context analysis steps).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title; if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kugimiya et al.

Regarding claim 6, Kugimiya suggests wherein the multiple morpheme list program refers to a multiple morpheme dictionary and determines whether there is a multiple morpheme included in the multiple morpheme list among morpheme analysis data, and then the multiple morpheme form is allotted to one multiple morpheme, thus reducing structural equivalency (see Figs. 10-12, which teaches determining an adverb phrase, 'if necessary' [multiple morpheme], treated as a separate group, one phrase). Kugimiya teaches this method generates a correct translation without requiring manual correcting processes, thereby increasing the speed of translation (col. 2, ll. 16-21).

13. Claim 2-5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kugimiya et al. in view of Akers et al., US Patent 6,278,967.

Regarding claim 4, Kugimiya in combination with Akers teaches a natural language retrieval method for retrieving documents (sentences) by inputting a natural language question using a syntax analysis method based on a mobile configuration concept, the method comprising:

analyzing a document in which sentence analysis information of a document that is an object of retrieval is stored in a sentence information database by a syntax analysis method based on a mobile configuration concept; analyzing question syntax in which in the document information database, if a question in a natural language is input, the syntax of the question is first analyzed according to the syntax analysis method based on the mobile configuration concept, the syntax analysis result is dissected in units of words according to syntax information, the interrogative sentence type of a question is captured, and a dissected, detailed question is determined (Akers teaches at col. 10, ll. 13-30, "preparser interprets... a question mark"; at col.

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6, ll. 56 – col. 7, line 8, teaches classification/subcategorization; see also col. 2-3, “tree structure”);

retrieving a document in which the role of the tag of the detailed question determined in a sentence analysis dictionary is converted into a tag for retrieval according to the desired interrogative sentence type, a word having the converted tag for retrieval is retrieved in the sentence analysis dictionary, and a ranking is calculated based on the frequency of retrieval; and displaying a result including retrieved words, sentences including tags for retrieval, and the contents of a document including the sentences (col. 16, ll. 51-61).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to combine the teaching elements of Kugimiya and Akers because teaches a system for generating natural language translations that are grammar rule-based and/or based on part-of-speech analysis (Abstract).

Regarding claim 5, Kugimiya teaches herein retrieving a document comprises: performing a first retrieval mode (step) in which by using only syntactically analyzed information, and based on only the result of syntax analysis of a question, a document database already analyzed in search and matching contents are extracted and provided (Abstract, Kugimiya teaches a dictionary look up and morpheme analyzer, syntax analyzer for analyzing a syntactic structure of the morpheme array provided by the look up and morpheme analyzer with dictionary and grammatical rules, a converter for converting the syntactic structure analyzed by the syntax analyzer into a corresponding syntactic structure and generator for generating a translation in accordance with the syntactic structure of the target language received from the

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converter referring to the information obtained by looking up the dictionary; Figure 1-3 illustrate the dictionary lookup, morpheme analysis, syntax analysis, meaning analysis, and context analysis steps).

Kugimiya in combination with Akers teaches, performing a second retrieval mode (step) in which when an expression is included in a question, according to the selection of a retriever, retrieval conditions for the second retrieval mode are generated, by a retrieval rule information and a noun system database, and based on the retrieval conditions, contents semantically dependent on a predetermined component are retrieved and provided (Akers teaches at col. 10, ll. 13-30, “preparser interprets... a question mark”; at col. 6, ll. 56 – col. 7, line 8, teaches classification/subcategorization; see also col. 2-3, “tree structure”),

wherein the first retrieval step is formed of a component matching retrieval method by which data matching direct constituents of a given question are extracted and provided, and a meaning matching retrieval method by which constituents forming a question are included and data including predicates that are core words and semantically similar predicates are extracted and provided, and the second retrieval step uses the retrieval rule information and a database based on a semantic hierarchical structure of a noun (col. 12, ll. 38-47, matching of linguistic features...properties of words and other constituents...[s]yntactic feature matching is used by the parser, and semantic feature matching is used by the graph marker; col. 9, ll. 5-13, synthesis rules, semantic feature true, structure trees; col. 11, ll. 45-50).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to combine the teaching elements of Kugimiya and Akers because teaches his method

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has many advantages over known machine-based translators such as increased efficiency (col. 1, ll. 12-26; col. 3, ll. 31-36).

Regarding claim 2, Kugimiya suggests forming a partial structure by operating and repeating an internal loop, wherein if a morpheme tagged with the semantic feature part of speech is input, the morpheme is treated as an individual morpheme, and by determining according to grammatical rules stored in the grammar rule database whether or not local structure rules are applied to a morpheme selected, a local structure is formed, and by referring to a succeeding object to be processed and determining whether or not a recursive local structure is formed, an internal structure is established, and if there are no other internal structure, a following process is repeatedly performed (see Figs. 10-12; col. 5, ll. 26-52, Kugimiya teaches determining an adverb phrase, forming a partial structure, and recursively determining whether a word related to the inserted adverb phrase information exists before generating a translation of the adverb phrase);

Kugimiya in combination with Akers teaches forming an entire structure according to the category and a sentence construction and an expression form based on the subcategorization database and an adjunct type database (Kugimiya teaches in col. 5, ll. 43-52, completing the translation process, forming an entire structure; Akers at col. 6, ll. 56 – col. 7, line 8, teaches classification/subcategorization; see also col. 2-3, “tree structure”);

selecting an optimum case by calculating the weight of each structure based on the location or the characteristic of a sentence construction and selecting a most important structure

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(Akers teaches in col. 16, ll. 51-61, system has derived a best-ranked translation...system retains the graph with expert weights); and

outputting an optimum case with mobile type (tree type) linking lines such that relations among the entire structure, each partial structure, and each morpheme of the determined optimum case are correspondingly connected and indicated by linking lines (Kugimiya in Figs. 7 and 8; Akers in col. 3, ll. 42-43, final tree structure, see also tree structures in col. 20).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to combine the teaching elements of Kugimiya and Akers because teaches his method has many advantages over known machine-based translators such as increased efficiency (col. 1, ll. 12-26; col. 3, ll. 31-36).

Regarding claim 3, Akers suggests a grammar rule database stores information defining grammatical rules on respective primitives; the subcategorization database stores information on details of constituents...adjunct type database stores information on general features of postpositions, endings, or suffixes...as elements determining equivalency of a multiple branch structure (Fig. 1 illustrates a base dictionary, technical dictionaries, grammar rules, synthesis rule file, semantic feature tree, structure trees, graph, and conversion databases; col. 9, ll. 5-8, user-created dictionaries).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to combine the teaching elements of Kugimiya and Akers because teaches his method has many advantages over known machine-based translators such as increased efficiency (col. 1, ll. 12-26; col. 3, ll. 31-36).

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eunice Ng whose telephone number is 571-272-2854. The examiner can normally be reached on Monday through Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

EN
2/19/08



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